advances in the treatment of multiple myeloma: survival analysis of 560 patients in a twenty-five years period in a single center
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Background. Therapy of multiple myeloma (MM) has been greatly advanced by introduction of autologous hematopoietic stem cell transplantation (AHSCT) in 90's, and appearance of new potent drugs thalidomide, bortezomib and lenalidomide in the last decade. Aims. To assess the efficacy of new treatment modalities on survival of MM patients treated at the University Hospital Center, Zagreb. PATIENTS AND METHODS. From 1985 till 2010, 560 consecutive MM patients (pts) were analyzed. Median age at diagnosis was 60 (range 25-89) years. Pts were divided into three groups according to time period of available treatment modalities: Group one treated from 1985-1995, period prior AHSCT (n=158, median age 63 [range: 31-87]); group two treated from 1996-2001, period with AHSCT (n=139, median age 58 [range: 29-87]); and group three treated from 2002-2010, period with AHSCT+bortezomib+thalidomide (n=263, median age 60 [range: 28-89]). Each group was subdivided in two subgroups according to age at diagnosis indicating eligibility for AHSCT (<65 and ≥65 years of age). Estimated median overall survival (OS) was calculated by Kaplan-Meier method. Differences between groups were tested by 2-tailed log-rank test with p value of <. 05 being statistically significant. Results. Median follow-up for entire cohort was 42. 5 (range: 1-267 months). Seventy-three pts were lost from follow-up after median time of 16 (range: 1-123) months. Estimated median OS was 69 (95%CI 59. 07-73. 94) months. For groups 1 and 2, estimated median OS were 38 (95%CI 29. 44-46. 56) and 47 (95%CI 36. 06-57. 94) months respectively, while for the group 3 estimated median OS was not reached for the median follow-up of 48 (range: 1-118) months. OS was significantly different between all groups: groups 1:2 (p=0. 000), groups 2:3 (p=0. 001), groups 1:3 (p<0. 0001) (Figure 1). When adjusted for age, significance between groups 1 and 2 was not reached (p=0. 058) although showing trends for better OS in group 2. Statistically significant difference remained between groups 1:3 and 2:3 (p<0. 0001, for each). OS for patients younger than 65 are significantly better compared to patients with 65 years or older, in all three groups. Conclusions. The analysis of OS clearly showed significantly better outcome for pts treated with AHSCT, especially for younger patients. In most recent time period both younger and older patients showed better OS probably due to introduction of new treatment modalities with thalidomide or bortezomib. Results of the study are in accordance with other similar retrospective analyses.

Figure 1. Overall survival for multiple myeloma patients in different periods.